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Knowledge, Attitude and Practice of Asthma Food Taboos and its Associated Factors among Asthmatic Patients in Pahang State, Malaysia

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Abstract: Misconception and outdated beliefs such as food taboos are commonly practiced among asthmatic patients especially in Asia. It will somehow affect the effectiveness of medical treatment of asthma. The objectives of this study was to determine the prevalence of practice of asthma food taboos and its associated factors identify factors among asthmatic patients. A cross sectional study was conducted in a primary health care clinic at Bandar Kuantan, Pahang. There were 400 asthmatic patients recruited in this study by convenience sampling method. The questionnaire comprised of 4 parts; socio-demography, knowledge, attitudes and practice towards asthma food taboos. Data was analyzed by using IBM Statistical Package for Social Science (SPSS) 19. A total of 46% of asthmatic patients were practicing asthma food taboos. Among factors studied, practice of asthma food taboos significant association with ethnicity ($p = 0.001$), level of education ($p = 0.011$) and exposure to health publicity ($p = 0.045$). Results also showed significant association between attitude and practice ($p < 0.001$). No significant difference was observed in the frequency of asthmatic attack between the practice and non-practice group ($p = 0.356$). It is concluded that the practice of asthma food taboos among asthmatic patients is high. Education and health publicity seems to be beneficial in promoting changes of practice and attitude of this taboos.

Key words: Asthma, food taboos, knowledge, attitudes, practice, Malaysia

INTRODUCTION

Asthma is a chronic disease that affects the airways in respiratory system. McFadden (1994) defined asthma as a disease of airways that is characterized by increased responsiveness of the tracheobronchial tree to a multiplicity of stimuli. It is manifested physiologically by a widespread narrowing of the air passages, which may be relieved spontaneously or as a result of therapy and clinically by paroxysms of dyspnea, cough and wheezing. In Malaysia itself, National Health and Morbidity Survey (NHMS, 2006) by the Ministry of Health of Malaysia had shown that asthma affect approximately 10-13% of the total population. This is higher than the finding in NHMS (2006) in which the prevalence of asthma was 4.2%. That is almost three and a quarter million people are suffering from asthma, majority of them are under-treated and living in very poor quality lives.

Generally, food taboos are food and beverages which people abstain from consuming for variety of reasons. Onuorah and Ayo (2003) defined food taboos as a codified set of rules about which foods or combinations of foods may not be eaten. The origin of these

prohibitions and commandments is varied. In some cases, these taboos are a result of health considerations or other practical reasons. Food taboos are also known as a result of human symbolic systems. According to Meyer-Rochow (2009), "most of religions declare certain food items fit and others unfit for human consumption". Dietary rules and regulations may govern particular phases of the human life cycle and may be associated with special events such as menstrual period, pregnancy, childbirth and lactation. In treating asthma, this concept is applied in our society.

Asian nations, in any treatment of disease, always came across local beliefs, so most of them realized that eating is the most important national preoccupation causes of asthmatic attack. The beliefs about what foods should or should not be taken during illness are often held with great conviction and are considered just as important for recovery as the doctor's prescription. Although some families' concern with food becomes obsession, it would be counterproductive to dismiss such ideas on the grounds that medical evidence is lacking or because they are difficult to explain.

The objective of this study was to determine the prevalence of practice of asthma food taboos and its associated factors among asthmatic patients in Kuantan, Pahang state, Malaysia.

MATERIALS AND METHODS

A cross-sectional study design was conducted in Kuantan, Pahang state. Four community-health clinics were chosen from list of community-health clinics in Kuantan provided by the Pahang State Department of Health, which are Klinik Kesihatan Bandar Kuantan, Klinik Kesihatan Berserah, Klinik Kesihatan Jaya Gading and Klinik Kesihatan Balok. Respondents were selected by convenient sampling from each chosen community health clinic. The sample size in this study was calculated using Kish (1965) formula. The total sample size for this study was 422.

The interviews were conducted in Bahasa Melayu. The questionnaires were given to the respondents together with the letter of explanation regarding the conduct of the study. The researcher guided the respondent to answer the questionnaires to avoid misunderstanding. There was no time restriction imposed for answering the questionnaires. The respondents need to answer all the questions and the questionnaires were collected the day after respondents had completed the questionnaires. Incomplete questionnaires were excluded from the analysis.

Pre-test survey was conducted among 30 asthmatic patients. Respondents marked either 'yes', 'no', 'true', 'false' or 'don't know'. Only for the attitude part, respondents answered by using likert scale (1-5): strongly disagree, disagree, not sure, agree and strongly agree.

Knowledge of asthma food taboos in this study is defined as any kind of information, awareness or familiarity that the person gained by experience, heard from somebody else, education, their grandparents, parent's belief, culture or religion related to asthma food taboos. In this study, good knowledge refers to the respondent who scored 15 marks and above. The total score is 20 marks.

Attitude towards asthma food taboos in this study refers to the way that people think or behave which is related to asthma food taboos. There are two categories of attitude towards asthma food taboos in this study, they are negative and positive attitude. Respondents who scored 18 marks and above had positive attitude while those who scored below the 18 marks had negative attitude towards asthma food taboos. The total score is 35 marks.

Practice of asthma food taboos in this study refers to rehearsing a behaviour over and over, engage in or perform actively related to asthma food taboos. Refers to the question 'Do you practice any kind of taboos in your daily meals and drinks to avoid asthmatic attack?', those

who answered 'Yes' means practice and 'No' means non-practice.

The UKM Research and Ethical Committee and Institute of Public Health (IPH) had approved this study. All the respondents received the written consent form and they have the right either to participate or refuse to participate in the study.

Statistical analysis: IBM Statistical Package for Social Science (SPSS) version 19.0 was used on data management and analysis. Descriptive statistics was calculated for all the socio-demographic data and expressed as mean (standard deviation) or median (inter-quartile range) and frequency (percentage) as appropriate. Analytical statistics were used to see the association between practice of food taboos and asthmatic attack. The level of significance was set as 0.05.

RESULTS

The study was conducted in four community clinics in the district of Kuantan, Pahang. The total sample size calculated was 422 respondents. However, only 400 (95.0%) respondents were recruited for this study. The mean age for respondents was 36.05 years (± 16.15 SD). Majority of the respondents were female (59.5%), Malay (88.2%), married (60.0%), had secondary school education (50.8%) and not working (31.5%).

Out of 400 respondents, 184 respondents admitted practicing taboos in their diet to reduce or prevent the asthmatic attack (46.0%). Among respondents who are practicing asthma food taboos, we analyzed the reasons for asthma food taboos in their diet to reduce and avoid asthmatic attack and a total of 74.0% of the respondents admitted it was a practice and belief from their parents and grandparents. Furthermore, 72.0% of them admitted that their family members and friends also have similar disease with 67.4% of them practiced asthma food taboos. Only 21.0% respondents admitted it is based on experience by either themselves or others. More than two thirds (67.9%) of the respondents mentioned that they started practicing food taboos to prevent the asthmatic attack after they had frequently attacks. Only 33.7% declared that they had practiced since their childhood (Fig. 1).

There are three types of food taboos most commonly practiced as reported by the respondents. First, taking ice or cold drink (83.2%), followed by 'cold fruits' category (81.5%) such as melons, grapes and oranges and the third common type of food taboos was 'cold vegetables' category (67.3%) such as luffa and cucumber. The other types of food taboos were nuts (33.7%), 'heaty fruits' category (25.0%) such as durian and banana, as well as chocolates (13.0%). The least asthma food taboos practiced were milk (9.3%) and eggs (8.2%) (Fig. 2).

Table 1: Knowledge on asthma food taboos and its association with socio-demographic factors

----- Knowledge on asthma food taboos -----				
Socio demographic factor:	Good N (%)	Poor N (%)	χ^2	p-value
Age				
<30 years old	179 (94.7)	10 (5.3)	13.241 ^b	0.021 ^b
30-39 years old	45 (80.3)	11 (19.7)		
40-49 years old	54 (84.4)	10 (156.0)		
50-59 years old	48 (90.6)	5 (9.4)		
60-69 years old	23 (92.0)	2 (8.0)		
≥50 years old	11 (84.1)	2 (15.9)		
Gender				
Male	152 (93.8)	10 (6.2)	4.431 ^a	0.035 ^a
Female	208 (87.4)	30 (12.6)		
Ethnicity				
Malay	318 (90.1)	35 (9.9)	0.000 ^b	1.000 ^a
Non malay	42 (89.4)	5 (10.6)		
Religion				
Islam	321 (89.9)	36 (10.1)	1.447 ^b	0.836 ^b
Buddhist	12 (85.7)	2 (14.3)		
Hindu	20 (95.2)	1 (4.8)		
Christian	5 (83.3)	1 (16.7)		
Others	2 (100.0)	0 (0.0)		
Educational level				
High education	135 (92.5)	11 (7.5)	1.553 ^a	0.213 ^a
Low education	225 (88.6)	29 (11.4)		
Occupational status				
Working	201 (91.4)	19 (8.6)	1.010 ^a	0.315 ^a
Not working	159 (88.3)	21 (11.7)		
Marital status				
Not married	149 (96.1)	6 (3.9)	10.563 ^a	0.001 ^a
Ever married	211 (86.1)	34 (13.9)		

^aPearson chi square ^bFisher's exact test

Table 2: Attitude towards asthma food taboos and its association with socio-demographic factors

----- Attitude towards asthma food taboos -----				
Socio demographic factor:	Positive N (%)	Negative N (%)	χ^2	p-value
Age				
<30 years old	126 (66.4)	63 (33.3)	3.449 ^b	0.636 ^b
30-39 years old	36 (64.3)	20 (35.7)		
40-49 years old	49 (76.6)	15 (23.4)		
50-59 years old	38 (71.7)	15 (28.3)		
60-69 years old	18 (72.0)	7 (28.0)		
≥50 years old	8 (61.6)	5 (38.4)		
Gender				
Male	107 (66.0)	55 (34.0)	0.924 ^a	0.336 ^a
Female	168 (70.6)	70 (29.4)		
Ethnicity				
Malay	238 (67.4)	115 (32.6)	2.466 ^a	0.116 ^a
Non malay	37 (78.7)	10 (21.3)		
Religion				
Islam	241 (67.5)	116 (32.5)	4.510 ^b	0.371 ^b
Buddhist	10 (71.4)	4 (28.6)		
Hindu	18 (85.7)	3 (14.3)		
Christian	5 (88.3)	1 (16.7)		
Others	1 (50.0)	1 (50.0)		
Educational level				
High education	100 (68.5)	46 (31.5)	0.007 ^a	0.933 ^a
Low education	175 (68.9)	79 (31.1)		
Occupational status				
Working	128 (71.1)	52 (28.9)	0.849 ^a	0.357 ^a
Not working	147 (66.8)	73 (33.2)		
Marital status				
Not married	103 (66.5)	52 (33.5)	0.622 ^a	0.430 ^a
Ever married	172 (70.2)	73 (29.8)		

^aPearson Chi-Square ^bFisher's exact test

Table 3: Practice towards asthma food taboos and its association with socio-demographic factors

----- Practice towards asthma food taboos -----				
	Practice N (%)	Non practice N (%)	χ^2	p-value
Socio demographic factor:				
Age				
<30 years old	71 (37.6)	118 (62.4)	12.813 ^b	0.024 ^b
30-39 years old	29 (51.8)	27 (48.2)		
40-49 years old	38 (59.4)	26 (40.6)		
50-59 years old	25 (47.2)	28 (52.8)		
60-69 years old	15 (60.0)	10 (40.0)		
≥50 years old	6 (46.2)	7 (53.8)		
Gender				
Male	68 (42.0)	94 (58.0)	1.775 ^a	0.183 ^a
Female	116 (48.7)	122 (51.3)		
Ethnicity				
Malay	152 (43.1)	201 (56.9)	10.458 ^a	0.001 ^a
Non malay	32 (68.1)	15 (31.9)		
Religion				
Islam	154 (43.1)	203 (56.9)	13.441 ^b	0.005 ^b
Buddhist	8 (57.1)	6 (42.9)		
Hindu	16 (76.2)	5 (23.8)		
Christian	5 (88.3)	1 (16.7)		
Others	1 (50.0)	1 (50.0)		
Educational level				
High education	55 (37.7)	91 (62.3)	6.421 ^a	0.011 ^a
Low education	129 (50.8)	125 (49.2)		
Occupational status				
Working	83 (46.1)	97 (53.9)	0.002 ^a	0.970 ^a
Not working	101 (45.9)	119 (54.1)		
Marital status				
Not married	60 (38.7)	95 (61.3)	5.415 ^a	0.020 ^a
Ever married	124 (50.6)	121 (49.4)		

^aPearson Chi-Square ^bFisher's exact test

Knowledge of asthma food taboos was significantly associated with age (p = 0.021), gender (p = 0.035) and marital status (p = 0.001) (Table 1). Meanwhile, none of socio-demographic factors significantly associated with attitude towards asthma food taboos (Table 2). However, the ethnicity (p = 0.001), religion (p = 0.011), educational level (p = 0.011) and health publicity exposure (p = 0.045) showed significant association with practice of asthma food taboos (Table 3).

Based on multiple logistic regression analysis (Table 4), the predictors for asthmatic food taboos practice were age, knowledge and attitude. Therefore, the predication equation for practicing asthma food taboos is as follows:

$$\text{Practicing of asthma food taboos} = -3.908 + 1.360 (\text{age}) - 0.635 (\text{educational level}) + 1.836 (\text{knowledge of asthma food taboos}) + 4.109 (\text{attitude towards asthma food taboos})$$

The Nagelkerke R square shows that 48.0% of the variation in the practicing of asthma food taboos is explained by the predictors.

DISCUSSION

The most important finding of our study is that the prevalence of asthma food taboos practitioners among asthmatic patients in this study was 46.0%. This draws

concern (nearly half of them) since a lot of literatures claimed that most of asthma food taboos bring more health problems rather than benefit to the practitioners (Azizi, 1990; NCDEA, 2009). The high prevalence of asthma food taboos practice could be to cultural and traditional belief (Chan and Norzila, 2003; Koehler and Leonhaeuser, 2008; Conner *et al.*, 2001).

The possible explanation for higher prevalence of asthma food taboos is lack of nutritional and health education of asthma, proper treatment and management. A number of studies (Jerret and Costello, 1996; Peterson-Sweeney *et al.*, 2003; Santati *et al.*, 2003; Trolvik and Severinsson, 2004) stated that parents made decisions based on 'trial and error' (which can lead to practice of asthma food taboos) strategies because they had been provided with insufficient information through asthma action plans (Jerret and Castello, 1996). In addition, Gibson *et al.* (1995) stated in their study, higher asthma knowledge was associated with positive attitudes and internal locus of control in asthma.

The result of this study implied that the older you are, the more you know about food taboos. There were significant associations between age, knowledge and practice of asthma food taboos. Aging is often associated with a stage of life accompanied by illness and frailness (Koehler and Leonhaeuser, 2008).

Table 4: Predictors of practice on asthma food taboos among asthmatic patient

Variables	Regression coefficient (B)	Standard error	Wald	Adjusted odds ratio	Confidence interval (95%)	p-value
Age (60-69 years old)	1.36	0.688	3.913	3.90	1.01-14.97	0.048
Educational level High	-0.635	0.289	4.843	0.53	0.30-0.93	0.028
Knowledge on asthma food taboos Good	1.836	0.587	9.791	6.27	1.99-19.79	0.002
Attitude towards asthma food taboos Positive	4.109	0.553	55.307	60.90	20.62-179.85	<0.001
Constant	-3.908	0.595	43.119	0.02	0.0	

Coding: Dependent variable: Practice on asthma, practice (1) and not practice (0)

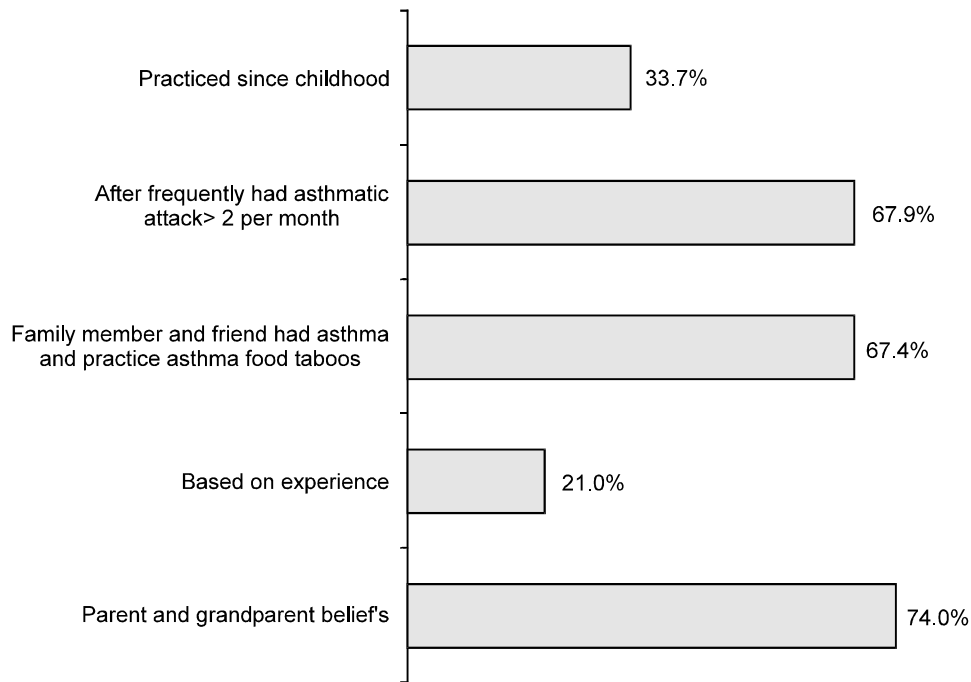


Fig. 1: Reasons of practicing asthma food taboos

Moreover, migration might be a powerful factor in the process of changing the knowledge and the attitude towards asthma food taboos. This reason was supported by Den Hartoge (2002) in which he concluded that many of the nutritionally undesirable taboos that existed a quarter of a century ago have weakened or disappeared as a result of education, mixing of people from different societies and travel.

There was a significant association between religion and practice but not in knowledge and attitude of asthma food taboos. Most religions declared certain food items are fit and others are unfit for human consumptions (Meyer-Rochow, 2009). However, in terms of knowledge and attitude of asthma food taboos, religion is not influencing factor. Not all knowledge and attitude on food taboos are related to religion. It is more connected to the culture or traditional belief (Koehler and Leonhaeuser, 2008; Conners *et al.*, 2001). Since nutrition and health education (more scientific and evidence based) took

place, it slowly reduced the knowledge of asthma food taboos in the community.

Further analysis (Multiple logistic regression) showed that the variables namely age, educational level, knowledge and attitude were significantly associated with practice of asthma food taboos. According to Demissie *et al.* (1998) the probability of practicing food taboos was not related to age factor. This study however found that there was a significant association between age and practice of asthma food taboos in which it is more prone in the elderly group. This might be due to Asian culture which is different from Western culture. A few decades ago, in Asian society the taboos were synonym with this vulnerable group. They are very committed and obedient to all kinds of taboos since during their time, it is very difficult to access health care services, poverty, make the cost of treatment not affordable to them.

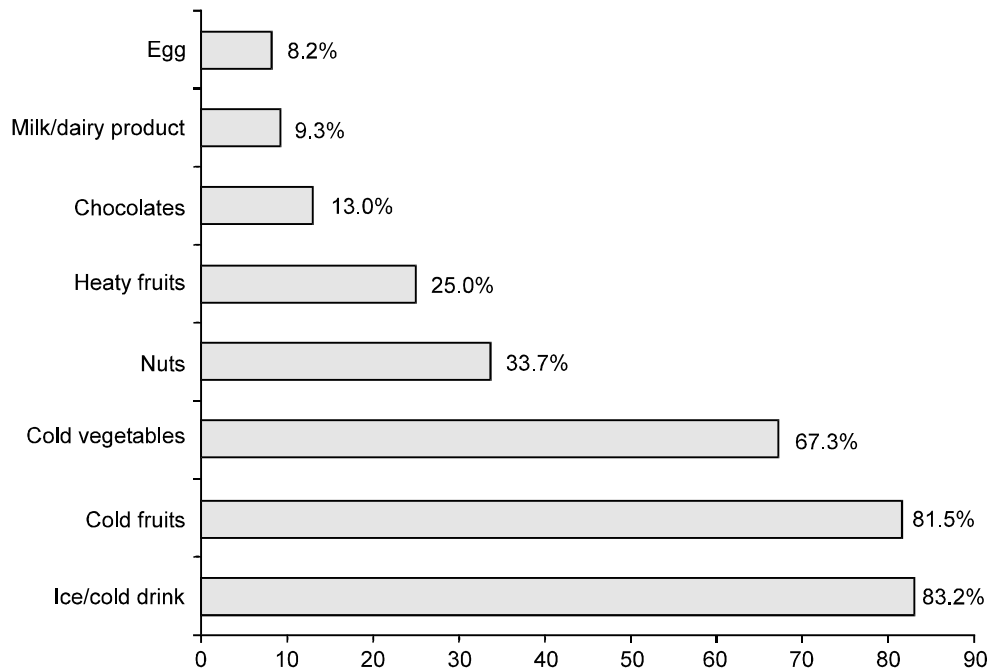


Fig. 2: Common types of asthma food taboos practiced by asthmatic patients

Limitations: There were a few limitations of this study. This finding was based on respondent's confession. Since the filling of the questionnaire was guided by the researcher and not self-administered, the respondents might be afraid to tell the truth plus, the interview was done in the clinic. The environment might be affecting the transparency and honesty of the respondent's answers.

Apart from that, this study only presents the perception of asthmatic patients regarding asthma food taboos, local belief and cultural belief. Data from the prospective of health care providers were not collected, which could have provided greater understanding of factors contributing to asthma food taboos. Information from multiple perspectives help in development of appropriate strategies to improve the effectiveness of asthmatic patients' treatment. Since recruitment of respondents was by convenient sampling method, it also affects the result of this study.

Conclusion: The practice of asthma food taboos is high among the asthmatic patients in this study. The importance of delivering proper education on asthma food taboos seems to be beneficial in promoting changes of practice and attitudes on these taboos. Therefore, it is indispensable that health professionals become more knowledgeable about the influence of culture on food and dietary behaviours that might be potentially harmful or dangerous to the asthmatic patient.

As this study was carried out among a specific group of asthmatic patients in Pahang, this study gives an alarm

to the public health care providers to strengthen their actions towards eliminating harmful and non-beneficial food taboos. The primary health care must play a leading role in coordinating this effort.

Competing of interest: Authors declare no competing of interest.

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